

REMARKS

In the Office Action, claim 12 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite. By this paper, claim 12 has been amended as suggested by the Examiner in order to remove any indefiniteness.

Claims 1, 2 and 6-9 were rejected under 35 U.S.C. 102(b) as being anticipated by Anderson (US 4,046,541). For the reasons set forth below, Applicant requests reconsideration and withdrawal of this rejection.

The present invention is directed to a spray ring and a reactor vessel including such a ring wherein the spray ring comprises a loop conduit which has one or more inlets and a plurality of outlet openings for spraying a wetting fluid onto char and/or slag in a water bath. The inlet flow direction has a component which is tangential to the loop line flow direction of the loop conduit. As set forth in the paragraph beginning on line 31 of page 2 of the specification, by arranging the inlet flow direction to have a component that is tangential to the circulation flow direction in the spray ring, circulation of wetting fluid through the spray ring is induced or enhanced. Settlement of solid particles that may be entrained in the wetting fluid is prevented or reduced by inducing or enhancing circulation in the spray ring.

The Anderson reference is directed to a slag quenching method for pyrolysis furnaces. As set forth in column 6, lines 21-37 of Anderson, Fig. 3 shows a plan view of one embodiment of the spray ring. Water flowing through conduit 125 enters slag duct 106 via tangentially arranged water nozzles 125a through 125h. These water injectors form a thin film of water along the inner wall of the duct. Accordingly, nozzles 125a through 125h would correspond to the outlets of the spray ring in the present invention, not the inlet. In Fig. 3, it appears that these nozzles are positioned directly within duct 106. While Anderson does suggest that a spray ring can be used, the illustrated nozzles correspond to the outlets of the spray ring and are slanted so as to provide a film of water along the inner wall of the duct. There is no teaching or suggestion in the Anderson reference of having an inlet to a spray ring being formed at a tangential angle to prevent accumulation of sediment within a spray ring.

Claims 1, 2, 4, 5, 9-12 and 16-19 were rejected under 35 U.S.C. 102(b) as being anticipated by Segerstrom (EP 0318071). The Segerstrom reference is discussed in the background portion of the specification beginning at line 1 on page 2. The spray ring described

in Segerstrom suffers from settlement of solid particles from the recycled water. The supply duct for the spray ring extends perpendicularly from the circular conduit. It does not have a tangential component as required by independent claims 1 and 9 of the present invention. The tangential component of the inlet line is discussed in the current application on page 8, lines 8-19. It is illustrated in Fig. 2 of the drawings and is related to the illustrated angle alpha.

Accordingly, Applicant respectfully submits that independent claims 1 and 9 are not anticipated by the Segerstrom reference since it does not disclose a tangential component to the inlet.

In view of the foregoing, Applicant submits that independent claims 1 and 9 are not anticipated by either Anderson or Segerstrom. Additionally, inasmuch as the other claims all depend either directly or indirectly from one of these two claims, Applicant submits that they are not anticipated for the same reasons. Further, Applicant submits that there is no teaching or suggestion in the cited references which would suggest the novel aspects of this invention and the advantages to be obtained thereby. Accordingly, Applicant submits that the claims are in condition for allowance.

Should the Examiner find any impediment to the prompt allowance of this case which could be corrected by telephone interview with the undersigned, the Examiner is requested to initiate such an interview.

Respectfully submitted,

JOHANNES GERARDUS MARIA SCHILDER

By /Craig M. Lundell/
His Attorney, Craig M. Lundell
Registration No. 30,284
(713) 241-2475

P. O. Box 2463
Houston, Texas 77252-2463